

AMERICAN MUSEUM NOVITATES

Number 848

Published by
THE AMERICAN MUSEUM OF NATURAL HISTORY
New York City

May 15, 1936

CENSUS OF PALEOCENE MAMMALS

BY GEORGE GAYLORD SIMPSON

In the course of a general review of the Paleocene and more detailed work on particular Paleocene mammalian faunas it was necessary to compile a list of all the definitely identified genera yet found in the Paleocene formations of the world. The information is widely scattered in over a hundred papers by twenty-five or thirty authors, and the publication of this generic list will facilitate not only the task of identifying Paleocene mammals but also any effort to learn something of these important faunas.

The formations recognized and their designations in the list are as follows:

Europe: Cernaysian, a local stratum in the upper part of the Thanetian, Upper Paleocene, in the Mont de Berru at Cernay-les-Reims, near Reims, France. Designated as "Cernay." A few of these genera, but no others, have also been found elsewhere in the Thanetian.

Asia: Gashato, an Upper Paleocene formation of very limited known extent at Shabarakh Usu in Outer Mongolia (the Mongolian Republic). Designated "Gashato."

South America: Río Chico, a formation probably of Upper Paleocene age in and near the coastal region of central and southern Chubut (central Patagonia), Argentina. The isolated faunules may be of different ages. Genera found in the uppermost stratum, transitional to the Casamayor Eocene, are designated "Upper Río Chico," others simply "Río Chico."

North America: Puerco, so designated, restricted to the true Puerco, Lower Paleocene of the San Juan Basin, New Mexico. Torrejon, so designated, restricted to the true Torrejon, Middle Paleocene, of the San Juan Basin, New Mexico. Tiffany, so designated, restricted to the true Tiffany, earlier Upper Paleocene of the northern San Juan Basin, Colorado.

Ruby, so designated, a formation of Upper Paleocene and Lower Eocene age in western Colorado. Only occurrences in the lower

Ruby, Paleocene are listed.

Paskapoo, so designated, of Alberta, Canada. The formation may cover a wider span, but the known mammals are all of Upper Paleocene age.

Fort Union, a group of formations covering most or, in places, all of the Paleocene. The name "Fort Union" is used very differently by different authors and has become very ambiguous. The important faunas are: that of the Crazy Mountain Field, central Montana, designated "Crazy Mountain Fort Union," the fossils all of approximately Torrejon age as far as known; that found at Bear Creek, southern Montana, designated "Bear Creek," of Upper Paleocene approximately Tiffany age or slightly later; and the three successive faunas found by Jepsen in Park County, northern Wyoming, designated "Fort Union 'Puerco,'" "Fort Union 'Torrejon,'" and "Fort Union 'Tiffany,'" from their age equivalence. Local names for these divisions are necessary but not published.

Clark Fork, so designated, later Upper Paleocene of the Clark Fork-Bighorn Basin, northern Wyoming, between the "Fort Union 'Tiffany'" and Sand Coulee, Lower Eocene.

In addition to the published literature, most of the original collections have been examined and Matthew's unpublished Puerco-Torrejon memoir read. Unpublished genera are not listed, but in several cases genera named in papers still in press when this manuscript was written are included. The latest revisions and my own opinion derived from the specimens are followed in the taxonomy, and synonymous genera are not listed. Genera marked * also occur in the Lower Eocene; others are confined to the horizons noted.

MULTITUBERCULATA

Ptilodontidae

<i>Kimbetohia</i>	Simpson, 1936. Puerco.
<i>Eucosmodon</i>	Matthew and Granger, 1921. Puerco, Torrejon, Fort Union "Torrejon," Crazy Mountain Fort Union.
<i>Ptilodus</i>	Cope, 1881. Torrejon, Crazy Mountain Fort Union, Fort Union "Torrejon," Fort Union "Tiffany?," Paskapoo?
<i>Ectypodus</i>	Matthew and Granger, 1921, Tiffany, Fort Union "Tiffany," Paskapoo, Crazy Mountain Fort Union?
* <i>Parectypodus</i>	Jepsen, 1930. Fort Union "Tiffany," Crazy Mountain Fort Union, Clark Fork.
<i>Microcosmodon</i>	Jepsen, 1930. Fort Union "Tiffany."
<i>Neoplagiaulax</i>	Lemoine, 1882. Cernay.
<i>Liotomus</i>	Cope, 1884. Cernay.

Taeniolabididae	
<i>Taeniolabis</i>	Cope, 1882. Puerco.
<i>Catopsalis</i>	Cope, 1882. Torrejon, Paskapoo.
<i>Prionessus</i>	Matthew and Granger, 1925. Gashato.
<i>Sphenopsalis</i>	Matthew, Granger and Simpson, 1928. Gashato.
MARSUPIALIA	
Didelphidae	
<i>Thylacodon</i>	Matthew and Granger, 1921. Puerco.
<i>Peradectes</i>	Matthew and Granger, 1921. Tiffany.
Borhyaenidae	
* <i>Patene</i>	Simpson, 1935. Río Chico.
Polydolopidae	
* <i>Polydolops</i>	Ameghino, 1897. Río Chico.
<i>Seumadia</i>	Simpson, 1935. Río Chico.
INSECTIVORA	
?Deltatheridiidae	
<i>Gelastops</i>	Simpson, 1935. Crazy Mountain Fort Union.
Palaeoryctidae ¹	
<i>Palaeoryctes</i>	Matthew, 1913. Torrejon.
Leptictidae	
<i>Prodiacodon</i>	Matthew, 1929. Torrejon, Crazy Mountain Fort Union.
<i>Acmeodon</i>	Matthew and Granger, 1921. Torrejon.
<i>Myrmecoboides</i>	Gidley, 1915. Crazy Mountain Fort Union.
<i>Emperodon</i>	Simpson, 1935. Crazy Mountain Fort Union.
<i>Leptacodon</i>	Matthew and Granger, 1921. Tiffany, Fort Union "Tiffany," Bear Creek, Crazy Mountain Fort Union.
<i>Xenacodon</i>	Matthew and Granger, 1921. Tiffany.
<i>Litolestes</i>	Jepsen, 1930. Fort Union "Tiffany."
* <i>Diacodon</i>	Cope, 1875. Fort Union "Tiffany," Paskapoo.
* <i>Adapisorex</i>	Lemoine, 1883. Cernay.
<i>Praolestes</i>	Matthew, Granger and Simpson, 1929. Gashato.
Nyctitheriidae	
<i>Stilpnodon</i>	Simpson, 1935. Crazy Mountain Fort Union.
<i>Protentomodon</i>	Simpson, 1928. Bear Creek.
Pantolestidae	
<i>Pentacodon</i>	Scott, 1892. Torrejon, Bear Creek?
<i>Aphronorus</i>	Simpson, 1935. Crazy Mountain Fort Union.
* <i>Palaeosinopa</i>	Matthew, 1901. Fort Union "Torrejon," Crazy Mountain Fort Union.
<i>Propalaeosinopa</i>	Simpson, 1927. Paskapoo.
Apheliscidae	
* <i>Apheliscus</i>	Cope, 1875. Clark Fork.
Mixodectidae	
<i>Mixodectes</i>	Cope, 1883. Torrejon.
<i>Indrodon</i>	Cope, 1884. Torrejon.
<i>Eudaemonema</i>	Simpson, 1935. Crazy Mountain Fort Union.

¹ This and other notations, ¹ to ⁹, in this list refer to notes on page 8.

?Insectivora inc. sed.

Picrodus

Douglass, 1908. Crazy Mountain Fort Union.

*Coriphagus*Douglass, 1908.² Crazy Mountain Fort Union, Torrejon.*Megopterna*

Douglass, 1908. Crazy Mountain Fort Union.

**Adapisoriculus*Lemoine, 1885.³ Cernay.*Pseudictops*

Matthew, Granger and Simpson, 1929. Gashato.

TILLODONTIA

Esthonychidae

**Esthonyx*

Cope, 1874. Clark Fork.

?DERMOPTERA

Plagiomenidae

Planetetherium

Simpson, 1928. Bear Creek.

?CHIROPTERA

?Phyllostomatidae

Zanycteris

Matthew, 1917. Tiffany.

PRIMATES

Plesiadapidae

Pronothodectes

Gidley, 1923. Crazy Mountain Fort Union.

**Plesiadapis*⁴Gervais, 1877. Cernay, Tiffany, Fort Union "Tiffany,"
Bear Creek, Paskapoo, Clark Fork.*Chiromyoides*

Stehlin, 1916. Cernay.

Apatemyidae

Labidolemur

Matthew and Granger, 1921. Tiffany, Bear Creek.

Carpolestidae

Elphidotarsius

Gidley, 1923. Crazy Mountain Fort Union.

Carpodaptes

Matthew and Granger, 1921. Tiffany.

Carpolestes

Simpson, 1928. Bear Creek, Clark Fork.

?Anaptomorphidae

Paromomys

Gidley, 1923. Crazy Mountain Fort Union.

Palaechthon

Gidley, 1923. Crazy Mountain Fort Union.

Palenochtha

Simpson, 1935. Crazy Mountain Fort Union.

Plesiolestes

Jepsen, 1930. Fort Union "Torrejon."

Navajovius

Matthew and Granger, 1921. Tiffany.

- Primates inc. sed.

**Phenacolemur*

Matthew, 1915. Tiffany, Fort Union "Tiffany."

TAENIODONTA

Stylinodontidae

Wortmania

Hay, 1899. Puerco.

Psittacotherium

Cope, 1882. Torrejon, Crazy Mountain Fort Union.

(Psittacotherium or**Calamodon* Cope, 1874). Bear Creek, Ruby.*Onychodectes*

Cope, 1888. Puerco.

Conoryctes

Cope, 1881. Torrejon, Crazy Mountain Fort Union.

EDENTATA

Metacheiromyidae

**Palaeonodon*

Matthew, 1918. Clark Fork.

Dasypodidae

Gen. indet.

Río Chico.

RODENTIA

Eurymylidae

Eurymylus

Matthew and Granger, 1925. Gashato.

Ischyromyidae⁵

CARNIVORA

Arctocyoniidae⁶*Carcinodon*

Scott, 1892. Puerco.

Loxolophus

Cope, 1885. Puerco. Fort Union "Puerco."

Oxyclaenus

Cope, 1884. Puerco.

Paradoxodon

Scott, 1892. Puerco.

**Chriacus*Cope, 1883. Puerco,⁷ Torrejon, Fort Union "Torrejon," Crazy Mountain Fort Union, Tiffany, Paskapoo.*Metachriacus*

Simpson, 1935. Crazy Mountain Fort Union.

Tricentes

Cope, 1884. Torrejon, Fort Union "Torrejon," Crazy Mountain Fort Union.

Spanoxyodon

Simpson, 1935. Crazy Mountain Fort Union.

Protogonodon

Scott, 1892. Puerco.

Deuteronodon

Simpson, 1935. Crazy Mountain Fort Union.

Prothryptacodon

Simpson, 1935. Crazy Mountain Fort Union.

**Thryptacodon*

Matthew, 1915. Tiffany, Bear Creek, Clark Fork.

Arctocyonides

Lemoine, 1891. Cernay.

Claenodon

Scott, 1892. Torrejon, Fort Union "Torrejon," Crazy Mountain Fort Union.

Arctocyon

Blainville, 1841. Cernay.

[Inc. sed.]

Deltatherium

Cope, 1881. Torrejon.

Elpidophorus

Simpson, 1927. Paskapoo.

Hyracolestes

Matthew and Granger, 1925. Gashato.

Triisodontidae

Eoonodon

Matthew and Granger, 1921. Puerco, Fort Union "Puerco."

Goniacodon

Cope, 1888. Torrejon.

Triisodon

Cope, 1881. Torrejon.

Mesonychidae

**Dissacus*

Cope, 1881. Torrejon, Tiffany?, Bear Creek, Clark Fork, Cernay.

Microclaenodon

Scott, 1892. Torrejon.

Oxyaenidae

**Oxyaena*

Cope, 1874. Clark Fork.

**Dipsalidictis*

Matthew, 1915. Clark Fork.

Dipsalodon

Jepsen, 1930. Clark Fork.

?Hyaenodontidae

Opisthopsalis

Matthew, Granger and Simpson, 1929. Gashato.

Miacidae

**Didymictis*

Cope, 1875. Torrejon, Crazy Mountain Fort Union, Clark Fork.

Ictidopappus

Simpson, 1935. Crazy Mountain Fort Union.

Carnivora inc. sed.

Sarcodon

Matthew and Granger, 1925. Gashato.

CONDYLARTHRA

Phenacodontidae

Tetraclaenodon

Scott, 1892. Torrejon, Fort Union "Torrejon," Crazy Mountain Fort Union.

Gidleyina

Simpson, 1935. Crazy Mountain Fort Union.

**Phenacodus*

Cope, 1873. Tiffany, Fort Union "Tiffany," Bear Creek, Paskapoo, Clark Fork.

**Ectocion*

Cope, 1882. Fort Union "Tiffany," Paskapoo, Clark Fork.

Meniscotheriidae

**Meniscotherium*

Cope, 1874. Paskapoo, Clark Fork.

Pleuraspidotherium

Lemoine, 1878. Cernay.

Orthaspidotherium

Lemoine, 1885. Cernay.

Hyopsodontidae

Mioclaenus

Cope, 1881. Torrejon.

Oxyacodon

Osborn and Earle, 1895. Puerco, Fort Union "Puerco."

Tiznatzinia

Simpson, 1936. Puerco.

Ellipsodon

Scott, 1892. Torrejon, Crazy Mountain Fort Union.

Protoselene

Matthew, 1897. Torrejon.

Litaletes

Simpson, 1935. Crazy Mountain Fort Union.

Litomylus

Simpson, 1935. Crazy Mountain Fort Union.

**Haplomytus*

Matthew, 1915. Clark Fork.

Haplaletes

Simpson, 1935. Crazy Mountain Fort Union.

*Phenacodaptes*Jepsen, 1930,⁸ Fort Union "Tiffany."

Didolodontidae

**Ernestokokenia*

Ameghino, 1901. Rio Chico.

?Condylarthra inc. sed.

Phenacolophus

Matthew and Granger, 1925. Gashato.

AMBLYPODA

Pantolambdidae

Pantolambda

Cope, 1882. Torrejon, Crazy Mountain Fort Union.

Titanoides

Gidley, 1917. Fort Union (near Buford, South Dakota), Ruby, Fort Union "Tiffany."

Coryphodontidae

**Coryphodon*

Owen, 1845. Clark Fork.

Periptychidae

Ectoconus

Cope, 1884. Puerco.

Conacodon

Matthew, 1897. Puerco, Fort Union "Puerco."

- Hemithlaeus* Cope, 1882. Puerco.
Anisonchus Cope, 1881. Puerco, Torrejon, Crazy Mountain Fort Union (also from an oil well in Louisiana).
Haploconus Cope, 1882. Torrejon.
Plagiptychus Matthew, 1936. Puerco.
Periptychus Cope, 1881. Torrejon, Tiffany.
Tricuspidontidae
Tricuspidodon Lemoine, 1885. Cernay.
- DINOCERATA
- Untatheriidae
**Probathyopsis* Simpson, 1929. Clark Fork.
Prodinoceras Matthew, Granger and Simpson, 1929. Gashato.
- LITOPTERNA
- ?Protheroitheriidae
Wainka Simpson, 1935. Río Chico.
**Victorlemoinea* Ameghino, 1901. Río Chico.
**Ricardolydekkeria* Ameghino, 1901. Río Chico.
**Josepholeidya* Ameghino, 1901. Río Chico.
- NOTOUNGULATA
- Arctostylopidae
*Palaeostylops*⁹ Matthew and Granger, 1929. Gashato.
Henricosborniidae
**Henricosbornia* Ameghino, 1901. Río Chico.
? **Polystylops* Ameghino, 1904. Río Chico.
? **Postpithecus* Ameghino, 1901. Río Chico.
?Notostylopidae
Gen. indet. Río Chico.
Isotemnidae
**Isotemnus* Ameghino, 1897. Río Chico.
Notopithecidae
? **Notopithecus* Ameghino, 1897. Río Chico.
? **Transpithecus* Ameghino, 1901. Río Chico.
Acoelodidae
Kibenikhorja Simpson, 1935. Río Chico.
Notoungulata inc. sed.
Seudervius Simpson, 1935. Río Chico.
- ASTRAPOTHERIA
- Trigonostylopidae
**Trigonostylops* Ameghino, 1897. Río Chico.
?Trigonostylopoidea inc. sed.
Shectenja Simpson, 1935. Río Chico.
Mammalia inc. sed.
Gashternia Simpson, 1935. Río Chico.
Carodnia Simpson, 1935. Río Chico.
Ctalecarodnia Simpson, 1935. Río Chico.

NOTES ON THE FAUNAL LIST

1. There is an unpublished probably palaeoryctid, but possibly deltatheridiid, genus in the Puerco (Reynolds).
2. *Coriphagus* may be an oxyclaenid. *Mixoclaenus* Matthew and Granger, 1921, is synonymous with it.
3. *Adapisoriculus* may be either didelphid or nyctitheriid. Referred specimens from the Lower Eocene are nyctitheriids, but their pertinence to the genus is not certain.
4. The survival of *Plesiadapis*, as such, into the Lower Eocene depends on an aberrant species that may not be placed in this genus when better known.
5. The occurrence of any ally of *Paramys* in the Upper Paleocene is known from a still undescribed specimen (Jepsen). I am indebted to Dr. Jepsen for the opportunity to include this very important new datum here.
6. There is an undescribed oxyclaenid genus in the Puerco (Reynolds).
7. The occurrence of *Chriacus* in the Puerco is known from an undescribed specimen (Simpson). It is very unlikely that one genus ranges from Lower Paleocene to Lower Eocene, but it cannot be split up on present data.
8. Jepsen referred *Phenacodactyles* to the Artiodactyla, with a query. This may be its true position, but so far as known to me the evidence much more strongly favors reference to the Hyopsodontidae.
9. *Palaeostylops* may include two related genera.

NUMERICAL RÉSUMÉ

The numbers of families and genera listed are of some interest as affording a criterion of the richness of the faunas and the status of our knowledge of them. They are as follows:

Whole Paleocene of the World

Families:

Confined to the Paleocene.....	8
Cretaceous, Paleocene, and later.....	4
Paleocene and later.....	29
Later families doubtful in the Paleocene.....	6
Total.....	47

Genera:

Confined to the Paleocene.....	113
Paleocene and Eocene.....	29
Eocene genera doubtful in the Paleocene.....	5
Undetermined but generically distinct from other Paleocene forms.....	2
Total.....	149

(Unpublished but known genera would add at least two confined to the Paleocene, making the present known total 151.)

North America

Lower Paleocene (Puerco and equivalents)

Families:

Cretaceous, Paleocene, and later.....	2
Lower Paleocene to Eocene or later.....	3
Lower to Upper Paleocene.....	2
Lower to Middle Paleocene.....	1
.....	—
Total.....	8

Genera:

Confined to the Lower Paleocene.....	18
Lower Paleocene to Middle Paleocene.....	2
Lower Paleocene to Eocene.....	1
.....	—
Total.....	21

Middle Paleocene (Torrejon and equivalents)

Families:

Cretaceous, Paleocene, and later.....	3
Lower Paleocene to Eocene or later.....	3
Lower to Upper Paleocene.....	2
Lower to Middle Paleocene.....	1
Middle Paleocene only.....	1
Middle to Upper Paleocene.....	2
Middle Paleocene to Eocene or later.....	7
.....	—
Total.....	19

Genera:

Lower Paleocene to Eocene.....	1
Lower to Middle Paleocene.....	2
Middle Paleocene only.....	43
Middle and Upper Paleocene.....	5
Middle Paleocene to Eocene.....	2
.....	—
Total.....	53

Upper Paleocene (Tiffany, Clark Fork, and equivalents)

Families:

Cretaceous, Paleocene, and later.....	3
Lower Paleocene to Eocene or later.....	3
Lower to Upper Paleocene.....	2
Middle Paleocene to Eocene or later.....	6
Middle to Upper Paleocene.....	2
Upper Paleocene and later.....	13
.....	—
Total.....	29

Genera:	
Lower Paleocene to Eocene.....	1
Middle Paleocene to Eocene.....	2
Middle to Upper Paleocene.....	6
Upper Paleocene only.....	18
Upper Paleocene and Eocene.....	15
Total.....	42
Europe—Cernaysian	
Families:	
Paleocene only (in Europe).....	4 ¹
Paleocene and Eocene or later.....	4
Total.....	8
Genera:	
Paleocene only (in Europe).....	9
Paleocene and Eocene.....	3
Total.....	12
Asia—Gashato	
Families:	
Paleocene only (in Asia).....	5 ²
Paleocene and Eocene or later.....	2
Total.....	7
Genera:	
Paleocene only.....	11
Total.....	11
South America—Río Chico	
Families:	
Paleocene and Eocene or later.....	11
Total.....	11
Genera:	
Paleocene only.....	9
Paleocene and Eocene.....	12
Total.....	21

Except in the first list, for the whole world, doubtful identifications have been listed without distinction from those more certain.

¹ Three of these occur also in the Eocene in America and probably will be found there in Europe.

² Two of these occur also in the Eocene in North America.

BIBLIOGRAPHY OF TYPE DESCRIPTIONS OF VALID GENERA KNOWN FROM THE PALEOCENE

The types of genera marked * are from the Eocene and in these cases the type description therefore does not refer primarily or at all to the occurrence of the genus in the Paleocene. Several other genera have since been found in the Eocene, but the type description is based on Paleocene occurrences. Including only type generic references, this bibliography is very much less extensive than would be one including all description and discussion of the Paleocene faunas.

- AMEGHINO, F. 1897. 'Mammifères crétacés de l'Argentine.' Bol. Inst. Geog. Arg. XVIII, pp. 406-521.
 **Notopithecus*, p. 419. **Trigonostylops*, p. 492.
 **Isotemnus*, p. 480. **Polydolops*, p. 497.
1901. 'Notices préliminaires sur des ongulés nouveaux des terrains crétacés de Patagonie.' Bol. Acad. Nac. Ci. Córdoba, XVI, reprint pp. 1-80.
 **Transpithecus*, p. 10. **Victorlemoinea*, p. 37.
 **Henricosbornia*, p. 11. **Josepholeidya*, p. 38.
 **Postpithecus*, p. 12. **Ricardolydekkeria*, p. 51.
 **Ernestokokenia*, p. 34.
1904. 'Nuevas especies de mamíferos, cretáceos y terciarios de la República Argentina.' An. Soc. Ci. Arg., LVI-LVIII, reprint pp. 1-142.
 **Peripantostylops*, p. 48. **Polystylops*, p. 51.
- BLAINVILLE, H. M. D. DE. 1841. 'Ostéographie ou description iconographique comparée du squelette et du système dentaire des mammifères.' Paris, 1839-1864.
 Arclocyon, tome II, fasc. ix, p. 73.
- COPE, E. D. 1873. 'Fourth notice of extinct Vertebrata from the Bridger and Green River Tertiaries.' Palaeont. Bull., No. 17, pp. 1-4.
 **Phenacodus*, p. 3.
1874. 'Report upon vertebrate fossils discovered in New Mexico, with descriptions of new species.' Ann. Rept. Chief of Engineers, 1874, Washington, Appendix FF, reprint pp. 1-18.
 **Esthonyx*, p. 6. **Oryaena*, p. 11.
 **Meniscotherium*, p. 8.
1875. 'Systematic catalogue of Vertebrata of the Eocene of New Mexico, collected in 1874.' Rept. to Engineer Dept. U. S. Army, in charge of Lieut. Wheeler, Washington, pp. 5-37.
 **Didymictis*, pp. 5, 11. **Apheliscus*, pp. 13, 16.
 **Diacodon*, p. 11.
- 1881a. 'On some Mammalia of the lowest Eocene beds of New Mexico.' Proc. Amer. Philos. Soc., XIX, pp. 484-495.
 Peritychus, p. 484. *Anisonchus*, p. 487.
 Conoryctes, p. 486. *Mioclaenus*, p. 487.

- 1881b. 'Mammalia of the Lower Eocene beds.' Amer. Naturalist, XV, pp. 337-338.
Deltatherium, p. 337.
- 1881c. 'The temporary dentition of a new creodont.' Amer. Naturalist, XV, pp. 667-669.
Triisodon, p. 667.
- 1881d. 'Eocene Plagiaulacidae.' Amer. Naturalist, XV, pp. 921-922.
Ptilodus, p. 921.
- 1881e. 'Notes on Creodonta.' Amer. Naturalist, XV, pp. 1018-1020.
Dissacus, p. 1019.
- 1882a. 'A new genus of Tillodonta.' Amer. Naturalist, XVI, pp. 156-157.
Psittacotherium, p. 157.
- 1882b. 'A second genus of Eocene Plagiaulacidae.' Amer. Naturalist, XVI, pp. 416-417.
Catopsalis, p. 416.
- 1882c. 'Two new genera of the Puerco Eocene.' Amer. Naturalist, XVI, pp. 417-418.
Haploconus, p. 417. *Pantolambda*, p. 418.
- 1882d. 'Notes on Eocene Mammalia.' Amer. Naturalist, XVI, p. 522.
**Ectocion*, p. 522.
- 1882e. 'A new genus of Taeniodonta.' Amer. Naturalist, XVI, pp. 604-605.
Taeniolabis, p. 604.
- 1882f. 'The Peripitychidae.' Amer. Naturalist, XVI, pp. 832-833.
Hemithlaeus, p. 832.
- 1883a. 'On the mutual relations of the bunotherian Mammalia.' Proc. Acad. Nat. Sci. Philadelphia, pp. 77-83.
Chriacus, p. 80.
- 1883b. 'First addition to the fauna of the Puerco Eocene.' Proc. Amer. Philos. Soc., XX, pp. 545-563.
Mixodectes, p. 558.
- 1884a. 'Second addition to the knowledge of the Puerco epoch.' Proc. Amer. Philos. Soc., XXI, pp. 309-324.
Oxyclaenus, p. 312. *Indrodon*, p. 318.
- 1884b. 'The Tertiary Marsupialia.' Amer. Naturalist, XVIII, pp. 686-697.
Liutomus, p. 691.
- 1884c. 'The Condylartha.' Amer. Naturalist, XVIII, pp. 790-805, 892-906.
Ectoconus, p. 796.
1885. 'The Oldest Tertiary Mammalia.' Amer. Naturalist, XIX, pp. 385-387.
Loxolophus, p. 386.
1888. 'Synopsis of the vertebrate fauna of the Puerco series.' Trans. Amer. Philos. Soc., XVI, pp. 298-361.
Onychodectes, p. 317. *Goniacodon*, p. 320.

- DOUGLASS, E. 1908. 'Vertebrate fossils from the Fort Union beds.' Ann. Carnegie Mus., V, pp. 11-26.
Picrodus, p. 17. *Megopterna*, p. 18.
Coriphagus, p. 17.
- GERVAIS, P. 1877. 'Énumération de quelques ossements d'animaux vertébrés recueillis aux environs de Reims par M. Lemoine: deuxième note.' Journ. Zool., VI, pp. 74-79.
Plesiadapis, p. 76.
- GIDLEY, J. W. 1915. 'An extinct marsupial from the Fort Union, with notes on the Myrmecobidae and other families of this group.' Proc. U. S. Nat. Mus., XLVIII, pp. 359-402.
Myrmecoboides, p. 395.
1917. 'Notice of a new Paleocene mammal, a possible relative of the titanotheres.' Proc. U. S. Nat. Mus., LII, pp. 431-435.
Titanoides, p. 431.
1923. 'Paleocene primates of the Fort Union, with discussion of relationships of Eocene primates.' Proc. U. S. Nat. Mus., LXIII, pp. 1-38.
Paromomys, p. 3. *Elphidotarsius*, p. 10.
Palaechthon, p. 6. *Pronothodectes*, p. 12.
- HAY, O. P. 1899. 'On the names of certain North American fossil vertebrates.' Science, (2) IX, pp. 593-594.
Wortmania, p. 593.
- JEPSEN, G. L. 1930a. 'Stratigraphy and paleontology of the Paleocene of north-eastern Park County, Wyoming.' Proc. Amer. Philos. Soc., LXIX, pp. 463-528.
Plesiolestes, p. 505. *Phenacodaptes*, p. 517.
Microcosmodon, p. 508. *Dipsalodon*, p. 524.
Litolestes, p. 513.
- 1930b. 'New vertebrate fossils from the Lower Eocene of the Bighorn Basin, Wyoming.' Proc. Amer. Philos. Soc., LXIX, pp. 117-131.
**Parectypodus*, p. 120.
- LEMOINE, V. 1878. 'Communication sur les ossements fossiles des terrains tertiaires inférieurs des environs de Reims.' Soc. Hist. Nat. Reims, 1878, reprint pp. 1-24.
Pleuraspidothorium, p. 15.
1882. 'Sur deux *Plagiaulax* tertiaires, recueillis aux environs de Reims.' C. R. Acad. Sci., XCV, pp. 1009-1011.
Neoplagiaulax, p. 1011.
1883. 'Sur l'*Adapisorex*, nouveau genre de mammifère de la faune cernaysienne des environs de Reims.' C. R. Acad. Sci., XCVII, pp. 1325-1327.
Adapisorex, p. 1325.
1885. 'Étude sur quelques mammifères de petite taille de la faune cernaysienne des environs de Reims.' Bull. Soc. Géol., France, (3) XIII, pp. 203-217.
Tricuspidon, p. 205. *Adapisoriculus*, p. 212.
Orthaspidothorium, p. 205.

1891. 'Étude d'ensemble sur les dents des mammifères fossiles des environs de Reims.' Bull. Soc. Géol., France, (3) XIX, pp. 263-290.
Arctocyonides, p. 275.
- MATTHEW, W. D. 1897. 'A revision of the Puerco fauna.' Bull. Amer. Mus. Nat. Hist., IX, pp. 259-323.
Conacodon, p. 298. *Protoselene*, p. 317.
1901. 'Additional observations on the Creodonta.' Bull. Amer. Mus. Nat. History, XIV, pp. 1-38.
**Palaeosinopa*, p. 22.
1913. 'A zalambdodont insectivore from the Basal Eocene.' Bull. Amer. Mus. Nat. History, XXXIII, pp. 307-314.
Palaeoryctes, p. 309.
1915. 'A revision of the Lower Eocene Wasatch and Wind River faunas.' Bull. Amer. Mus. Nat. History, XXXIV, pp. 1-103, 311-328, 429-483.
**Thryptacodon*, p. 7. **Haplomylys*, p. 313.
Dipsalidictis, p. 63. **Phenacolemur*, p. 479.
1917. 'A Paleocene bat.' Bull. Amer. Mus. Nat. History, XXXVII, pp. 569-571.
Zanycteris, p. 569.
1918. 'A revision of the Lower Eocene Wasatch and Wind River faunas.' Bull. Amer. Mus. Nat. History, XXXVIII, pp. 565-657.
**Palaeonodon*, p. 621.
1929. 'Preoccupied names.' Journ. Mammalogy, X, p. 171.
Prodiacodon, p. 171.
- MATTHEW, W. D., AND W. GRANGER. 1921. 'New genera of Paleocene mammals.' Amer. Mus. Novitates, No. 13, pp. 1-7.
Ectypodus, p. 1. *Acmeodon*, p. 3.
Eucosmodon, p. 1. *Labidolemur*, p. 4.
Peradectes, p. 2. *Navajovius*, p. 5.
Thylacodon, p. 2. *Carpodaptes*, p. 6.
Leptacodon, p. 2. *Eoconodon*, p. 6.
Xenacodon, p. 3. *Mixoclaenus*, p. 6.
1925. 'Fauna and correlation of the Gashato Formation of Mongolia.' Amer. Mus. Novitates, No. 189, pp. 1-12.
Palaeostylops, p. 2. *Phenacolophus*, p. 8.
Prionessus, p. 6. *Hyracolestes*, p. 10.
Eurymylus, p. 7. *Sarcodon*, p. 11.
- MATTHEW, W. D., W. GRANGER, AND G. G. SIMPSON. 1928. 'Paleocene multituberculates from Mongolia.' Amer. Mus. Novitates, No. 331, pp. 1-4.
Sphenopsalis, p. 2.
1929. 'Additions to the fauna of the Gashato Formation of Mongolia.' Amer. Mus. Novitates, No. 376, pp. 1-12.
Praolestes, p. 3. *Opisthopsalis*, p. 8.
Pseudictops, p. 4. *Prodinoceras*, p. 10.

- OSBORN, H. F., AND C. EARLE. 1895. 'Fossil mammals of the Puerco beds. Collection of 1892.' Bull. Amer. Mus. Nat. Hist., VII, pp. 1-70.
Oxyacodon, p. 25.
- OWEN, R. 1845. 'Odontography.' London, 1840-1845.
**Coryphodon*, p. 607.
- SCOTT, W. B. 1892. 'A revision of the North American Creodonta, with notes on some genera which have been referred to that group.' Proc. Acad. Nat. Sci. Philadelphia, 1892, pp. 291-323.
Pentacodon, p. 296. *Microclaeonodon*, p. 302.
Ellipsodon, p. 298. *Protagonodon*, p. 322.
Claeonodon, p. 298. *Paradoxodon*, p. 322.
Tetraclaeonodon, p. 299. *Carcinodon*, p. 323.
- SIMPSON, G. G. 1927. 'Mammalian fauna and correlation of the Paskapoo Formation of Alberta.' Amer. Mus. Novitates, No. 268, pp. 1-10.
Propalaeosinopa, p. 2. *Elpidophorus*, p. 5.
1928. 'A new mammalian fauna from the Fort Union of Southern Montana.' Amer. Mus. Novitates, No. 297, pp. 1-15.
Protentomodon, p. 3. *Planetetherium*, p. 11.
Carpolestes, p. 7.
1929. 'A new Paleocene uinathere and molar evolution in the Amblypoda.' Amer. Mus. Novitates, No. 387, pp. 1-9.
Probathyopsis, p. 1.
- 1935a. 'Description of the oldest known South American mammals, from the Rio Chico Formation.' Amer. Mus. Novitates, No. 793, pp. 1-25.
**Patene*, p. 3. *Kibenikhorja*, p. 16.
Seumadia, p. 5. *Shecenia*, p. 19.
Gashternia, p. 6. *Carodnia*, p. 20.
Wainka, p. 9. *Ctalecarodnia*, p. 22.
Seudenius, p. 14.
- 1935b. 'New Paleocene mammals from the Fort Union of Montana.' Proc. U. S. Nat. Mus., LXXXIII, pp. 221-244.
Gelastops, p. 227. *Metachriacus*, p. 235.
Emperodon, p. 229. *Spanoxyodon*, p. 236.
Stilpnodon, p. 229. *Ictidopappus*, p. 237.
Aphronorus, p. 230. *Gidleyina*, p. 240.
Eudaemonema, p. 231. *Litaletes*, p. 242.
Palenochiia, p. 231. *Haplaletes*, p. 243.
Deuteronodon, p. 232. *Litomylus*, p. 243.
Prothryptacodon, p. 233.
1936. 'Additions to the Puerco fauna, Lower Paleocene.' Amer. Mus. Novitates.¹
Kimbetohia. *Tiznatzinia*.
- STEHLIN, H. G. 1916. 'Die Säugetiere des schweizerischen Eocaens 7^{ter} Teil, 2^{te} Hälfte.' Abh. schweiz. pal. Ges., XLI, pp. 1299-1552.
Chiromyoides, p. 1489.

¹ This paper is going to press at about the same time as the present list, and will be American Museum Novitates, No. 849

